



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 :

A01K 93/00

A1

(11) International Publication Number:

WO 93/00802

(43) International Publication Date:

21 January 1993 (21.01.93)

(21) International Application Number: PCT/SE92/00449

(22) International Filing Date: 18 June 1992 (18.06.92)

(30) Priority data:

9102146-9

9 July 1991 (09.07.91)

SE

(71)(72) Applicant and Inventor: SWÄRD, Leif [SE/SE]; Moss-
bergsvägen 13, S-826 36 Söderhamn (SE).(74) Agent: AWAPATENT AB; Box 53, S-826 22 Söderhamn
(SE).(81) Designated States: AT, AU, BB, BG, BR, CA, CH, CS,
DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG,
MN, MW, NL, NO, PL, RO, RU, SD, SE, US, European
patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU,
MC, NL, SE), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, ML, MR, SN, TD, TG).

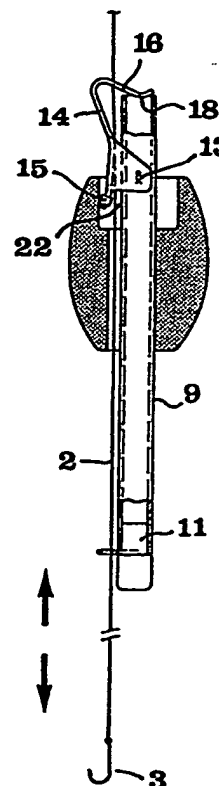
Published

*With international search report.**In English translation (filed in Swedish).*

(54) Title: FISHING FLOAT

(57) Abstract

A float is fixable at optional points along a line (2) carrying a fishhook (3). A locking means enabling such adjustable locking of the float comprises a pivotable arm (14) which is connected to the float by an articulation (13) and which has a clamping jaw (15) and a snap means (16). This snap means is movable between a first position in which the jaw (15) is maintained at a distance from the float to permit free movement of the line, and a second position in which the jaw is maintained applied against the float while clamping and locking the line.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	FI	Finland	MI	Mali
AU	Australia	FR	France	MN	Mongolia
BB	Barbados	GA	Gabon	MR	Mauritania
BE	Belgium	GB	United Kingdom	MW	Malawi
BF	Burkina Faso	GN	Guinea	NL	Netherlands
BG	Bulgaria	GR	Greece	NO	Norway
BJ	Benin	HU	Hungary	PL	Poland
BR	Brazil	IE	Ireland	RO	Romania
CA	Canada	IT	Italy	RU	Russian Federation
CF	Central African Republic	JP	Japan	SD	Sudan
CG	Congo	KP	Democratic People's Republic of Korea	SE	Sweden
CH	Switzerland			SN	Senegal
CI	Côte d'Ivoire	KR	Republic of Korea	SU	Soviet Union
CM	Cameroon	LJ	Liechtenstein	TD	Chad
CS	Czechoslovakia	LK	Sri Lanka	TG	Togo
DE	Germany	LU	Luxembourg	US	United States of America
DK	Denmark	MC	Monaco		
ES	Spain	MG	Madagascar		

FISHING FLOATField of the Invention

This invention relates to a fishing float which is
5 fixable along a line carrying a fishhook or the like, and
with which is associated a locking means serving, after
the fishhook has been lowered to the bottom of the lake
and pulled up to the desired level above the bottom, to
10 lock the line in a fixed position in relation to the
float, more precisely by pulling the line, said locking
means comprising an arm which is articulated to the float
and has a clamping jaw and which is pivotable between a
first position, in which it is snapped fast in relation to
the float and the clamping jaw is maintained at a distance
15 from an abutment surface on the float to permit free move-
ment between the line and the float, and a second posi-
tion, in which the clamping jaw is maintained applied
against said abutment surface while clamping and locking
the line, the latter running through a hole or a recess in
20 said pivotable arm to enable the arm to pivot from said
first position to said second position by pulling the
line.

Background of the Invention

When casting, the angler uses a casting rod with a
25 reel-out line to which are attached a sinker and a fish-
hook, a float being provided between the hook and the rod,
more precisely at such a distance from the hook that this
is positioned on a certain level above the bottom of the
lake or sea. Compared with conventional angling with a
30 fishing rod (to which a fairly short line is secured),
casting is advantageous in that it enables the angler to
cast the hook and bait far out from the beach or the boat
where he may be standing. There is, however, the dis-
advantage, especially when fishing in unknown waters, that
35 it may be difficult to position the hook at a suitable
depth in view of the form of fishing conducted. With some
prior-art floats, the depth is determined either by a

tapering pin being pressed into the through bore of the float to clamp the line in relation to the float, or by a knot being tied on the line and serving to stop the float in a given position. In both cases, however, the depth of the hook has to be determined before casting the hook and bait, which involves considerable margins of error and thus reduces the chances of successful fishing, unless the angler knows beforehand the exact depth of waters at the site where the hook is cast into the water.

10 Description of the Prior Art

In order to obviate the above disadvantage, SE Patent Application 8903574-5 provides a float which is freely movable in relation to the line when the hook and bait are cast into the water and which can be fixed in the desired position in relation to the line by pulling the latter, more precisely after the angler has established the desired level of the hook above the bottom of the lake. In this prior-art float, the line is run through a tubular element which at one end has a ball element which is mounted in a spherical seat in the upper part of a floating body forming part of the float proper. When the float is to be cast, the tubular element is maintained aligned with a bore through the floating body so as to permit free movement between the line and the float. When the float is floating on the water surface and the hook, after having been lowered to the bottom, has been pulled up to the desired level, a pulling movement in the line pivots the tubular element in relation to the floating body, the ball element serving as an articulation, and the line is clamped at the surface of engagement between the outside of the ball element and the inside of the seat.

Similar floats are also disclosed in US Patents 2,609,634 and 2,785,499.

A serious inconvenience of such prior-art adjustable floats is, however, that the line is heavily deformed when clamped between the ball element and the spherical seat. When thus clamped, the line is bent at an angle of at

least 90° and is acted on by fairly sharp-edged transition portions between the inside of the tubular element and the outside of the ball element. Under unfavourable circumstances, the line may even become notched. The notches
5 will later serve as rupture indications, and the line then is liable to break also when subjected to fairly moderate tensile stresses. As a result of the clamping of the line between the ball element and the seat, the line will, in other cases, tend to twist and form helical portions.
10 Quite often, this will in turn entail the risk of line tangle or 'birdnests', making it more difficult for the line to pass freely through the float, or even preventing such free passage, when the fishhook is cast or pulled in.

Summary of the Invention

15 The present invention aims at obviating the above drawback of prior-art adjustable floats. A basic object of the invention is, therefore, to provide an adjustable float whose locking means does not deform or otherwise damage the line when this is locked in relation to the
20 float. Another object of the invention is to provide a locking means which is easy and cheap to manufacture, thereby making it possible to produce floats at low costs. Yet another object of the invention is to provide a float whose locking means functions satisfactorily when shifted
25 between locking and releasing positions. A further object of the invention is to provide a float which is easily manufactured in embodiments of very different buoyancy.

According to the invention, at least the basic object is achieved by a fishing float having the distinctive
30 features recited in the characterising clause of appended claim 1. Other features of the invention appear from appended claims 2-4.

Brief Description of the Drawing

In the drawing,

35 Fig. 1 is a general view illustrating how casting is carried out by means of a casting rod whose line is equipped with a float according to the invention,

Fig. 2 is an enlarged cross-section of a float according to the invention in a first operating position in which the line is freely movable in relation to the float, and

- 5 Fig. 3 is a similar cross-section of the float in a position where the line is locked.

Description of the Preferred Embodiment

Fig. 1 shows a casting rod 1 having a line 2, at the free end of which is provided a fishhook 3 and, optionally, a sinker (it goes without saying that any other means used for catching fish should be ranked in the same category as the fishhook). A float 4 according to the invention is arranged between the hook 3 and the rod 1. As appears from Fig. 1, the bottom 5 under the water surface 10 6 may be of varying profile, and the depth at different sites of splash-down of the float 4 may thus vary considerably. As mentioned by way of introduction, the float according to the invention should, after the hook and the float have been cast to the desired site, permit the hook 15 20 to be positioned at an optional level above the bottom, regardless of the depth of water at this particular site.

Figs 2 and 3 illustrate in detail the construction of the float according to the invention. In this preferred embodiment, the float 4 comprises a special floating body 25 7 and a pin 9 which is introduced in a through bore 8 in the floating body and which is of greater length than this body. In conventional manner, the floating body 7 may be spool-shaped and be made of a material of low density, such as cellular plastic or cork (naturally, the floating 30 body may also consists of a shell containing air). The upper part of the floating body is formed with an upwardly open, annular recess 10 of markedly larger diameter than the bore 8. In practice, the pin 9 advantageously is a tube, e.g. made of plastic, which in its lower part 35 accommodates a sinker 11, e.g. an element of lead or some other heavy metal. The sinker 11 serves to position at all times the float as illustrated, i.e. with the recess 10

facing upwards, when the float is cast into the water. In practice, the pin 9 is permanently connected to the floating body 7, e.g. inserted by press fit into the bore 8 (in the float according to the invention, the floating body need not be displaceable in relation to the pin). The floating body 7 is, beside the bore 8, formed with another through passage 12 through which the line 2 can pass. This passage 12 is of considerably smaller diameter or cross-sectional area than the bore 8.

10 A pivotable arm 14 is connected to the upper part of the pin 9 by an articulation 13 and has a clamping jaw 15 and a snap means 16. More precisely, the pivotable arm 14 has two side members 17 (of which but one is shown in the drawing) which grip the pin and serve as attachments for a
15 pivot pin or peg (in practice, the articulation 13 may also be designed otherwise, e.g. comprise projections jutting out from the insides of the side members 17 and engaging in holes or recesses in the outside of the pin). In this case, the clamping jaw 15 is positioned at a lower
20 end of the pivotable arm 14, more precisely on a level below the articulation 13. Conveniently, the clamping jaw is an element made of rubber or non-rigid plastic ensuring that there is a considerable friction between the clamping jaw and the line, albeit it is also conceivable to make
25 the jaw an integral part of the pivotable arm itself. In the embodiment shown, the snap means 16 is an elastic or resilient finger which projects at an angle from the pivotable arm 14 and which, in the area inwardly of a free end remote from the arm, has an arcuately curved portion
30 18. At a distance from this arcuate portion 18, the finger 16 has a through hole 19, through which the line 2 can pass. It should also be pointed out that the line 2 runs through and is guided by an eye 20 at the lower end of the pin 9.

35 In the position illustrated in Fig. 2, the arcuate portion 18 of the finger 16 on the upper end of the pivotable arm 14 has been snapped into an upwardly open seat 21

formed in the upper end of the pin (this seat can be provided either by the tube opening upwards or by a cavity being formed in the upper end of the pin). In this position, the clamping jaw 15 is removed from the outside of the pin 9, which at 22 forms an abutment surface against which the jaw can be applied. Thus, the line 2 is, in this position, freely movable in relation to the float, and it should be pointed out that the hole 19 in the finger 16 is fairly close to the pin 9, which means that the line 2 can run substantially rectilinearly in parallel with the pin.

When the hook and bait are to be cast to the desired site together with the float, the pivotable arm 14 is maintained locked in the position shown in Fig. 2. When the float has landed on the desired site on the water surface, the hook 3 can be lowered to the bottom of the lake and thereafter be pulled up a certain desired distance above the bottom. This can be done, since the line 2, as pointed out above, is freely movable in relation to the float in the position shown in Fig. 2. When the angler then wants to lock the line in relation to the float, he simply pulls the line. As a result of this pulling movement, the arcuate portion 18 of the finger 16 is released from its engagement with the seat 21, and the arm 14 is swung to the position shown in Fig. 3, in which the jaw 15 is applied against the abutment surface 22. In this position, the jaw is resiliently applied against the abutment surface while the outer end of the arcuate portion 18 of the finger 16 will be maintained snapped fast against the upper edge of the pin 9. By its elasticity, the finger 16 will thus maintain the arm 14 in a pivotal position in which the jaw 15 is applied against the abutment surface with a certain spring force. In this manner, the line 2 will be clamped between the jaw and the abutment surface, and thus be locked in relation to the float in the given, desired position. It should be observed that the hole 19 in the finger 16 is positioned rather far away from the pin 9, which means that the line will run

obliquely to the pin in the area between the clamping jaw and the hole. Thus, when a fish baits and pulls at the line, the arm 14 will be swung back to its initial position (shown in Fig. 2) by the line being straightened, when pulled, and forcing the arcuate portion 18 of the finger 16 over the upper edge of the pin into engagement with the seat 21. This ensures that the float may, when a caught fish is being landed, move along the line all the way up to the place of the hook 3, and the fish is thus pulled in all the way up to the top of the rod 1.

The advantages of the invention are obvious. Since the clamping jaw, which can be made of a soft and smooth material, such as rubber, moves in a simple motion towards and away from the abutment surface, it will clamp the line in a gentle but distinct fashion without any ensuing deformation or damage. Thus, it is ensured that the line is not damaged or twisted even after having been thus clamped several times. Another advantage of the invention is that the pivotable arm described can be made of plastic in one piece in fast repeatable operations, thus giving an extremely cheap locking means for the line. Further, floats of different buoyancy can be manufactured in a simple and rational fashion, since all the components, apart from the floating body itself, can be standardised so that one need merely apply floating bodies of different designs and buoyancy to a pin of standard design.

Conceivable Modifications of the Invention

It goes without saying that the invention is not restricted to the embodiment described above and shown in the drawing. Thus, the invention can be applied also to floats that are not composed of a separate floating body and a separate pin, e.g. by moulding a sinker in the floating body proper and connecting the pivotable arm, not to a separate pin, but to any suitably shaped part of the floating body.

CLAIMS

1. A fishing float which is fixable along a line (2)
5 carrying a fishhook (3) or the like, and with which is
associated a locking means serving, after the fishhook (3)
has been lowered to the bottom of the lake and pulled up
to the desired level above the bottom, to lock the line in
a fixed position in relation to the float, more precisely
10 by pulling the line, said locking means comprising an arm
(14) which is articulated to the float and has a clamping
jaw (15) and which is pivotable between a first position,
in which it is snapped fast in relation to the float and
the clamping jaw (15) is maintained at a distance from an
15 abutment surface (22) on the float to permit free movement
between the line and the float, and a second position, in
which the clamping jaw (15) is maintained applied against
said abutment surface while clamping and locking the line
(2), the latter running through a hole or a recess in said
20 pivotable arm to enable the arm to pivot from said first
position to said second position by pulling the line,
c h a r a c t e r i s e d in that the pivotable arm (14)
is arranged on the outside of the float or a part (9)
thereof and comprises, apart from said clamping jaw (15),
25 a snap means (16) separate from the clamping jaw and being
in the form of an elastic finger (16) which projects at an
angle from the pivotable arm (14) and which, in the area
inwardly of a free end remote from the arm, has an
arcuately curved portion (18) which, in said first posi-
30 tion, is maintained in a seat (21) in the float and which,
in said second position, can be applied against a part of
the float that is spaced from the seat, the hole (19) for
the line (2) being positioned at a distance from the free
end of the finger (16) so as to release, when the line is
35 pulled, the arcuate portion (18) of the finger (16) from
its engagement with the seat (21) and move said portion
into resilient engagement against said part of the float.

2. The float of claim 1, characterised in that the snap means (16) and the clamping jaw (15) of the pivotable arm (14) are arranged on opposite sides of an articulation (13) about which the arm (14) is pivotable.

3. The float of claim 1 or 2, characterised in that the clamping jaw consists of an element (15) of rubber or non-rigid plastic.

4. The float of any one of the preceding claims, comprising a floating body (7) and a pin (9) which is introduced in a bore (8) extending through said floating body, is of greater length than said body, and is equipped, at one end, with a sinker (11), characterised in that the pivotable arm (14) is articulated to said pin (9) at an end opposite to the sinker (11) to permanently position the pivotable arm above the floating body when the float is floating on the water, and that a through passage (12) for the line (2) is formed in the floating body (7) beside the bore (8) for the pin (9).

20

25

30

35

1/1

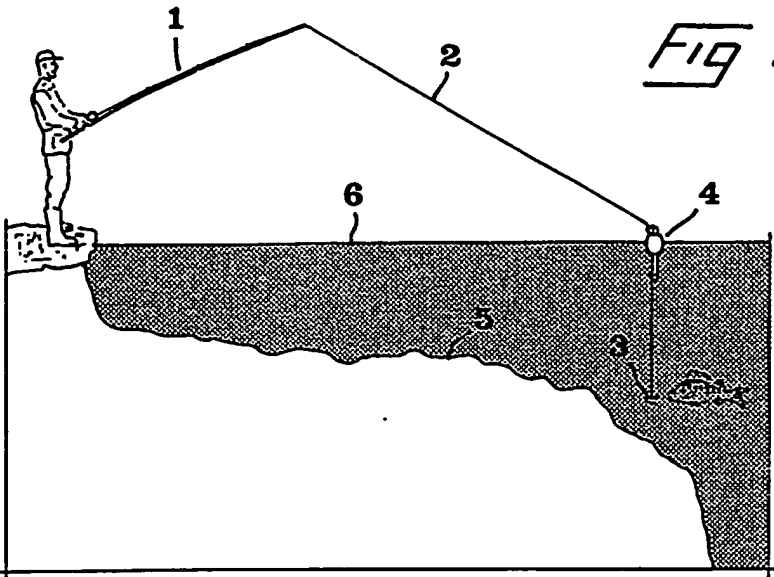


Fig 2

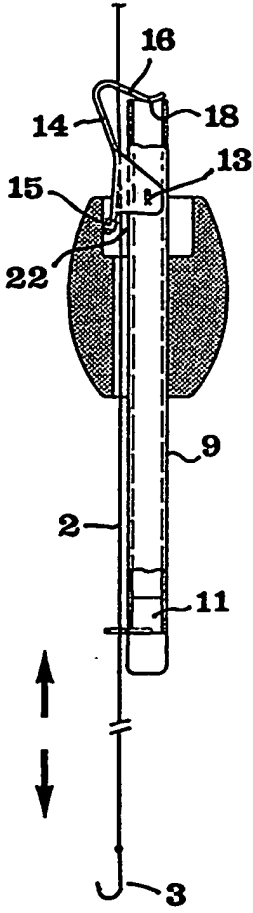
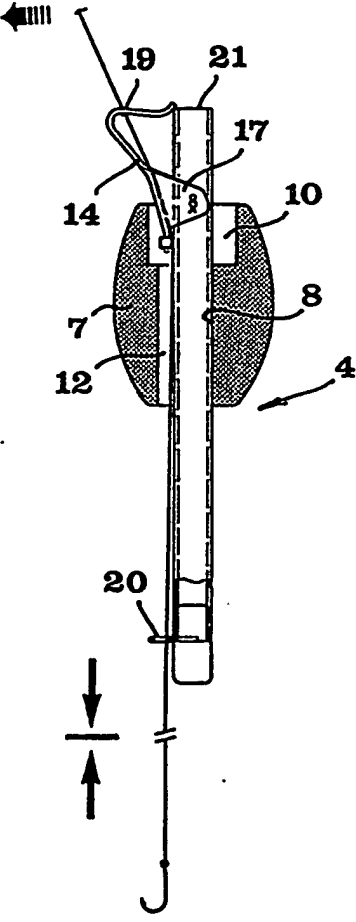


Fig 3



INTERNATIONAL SEARCH REPORT

International Application No PCT/SE 92/00449

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) ⁶ According to International Patent Classification (IPC) or to both National Classification and IPC IPC5: A 01 K 93/00											
II. FIELDS SEARCHED <div style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;">Minimum Documentation Searched⁷</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 20%; border-bottom: 1px solid black;">Classification System</th> <th style="border-bottom: 1px solid black;">Classification Symbols</th> </tr> <tr> <td style="height: 40px; vertical-align: top; border-right: 1px solid black; border-bottom: 1px solid black;">IPC5</td> <td style="border-bottom: 1px solid black;">A 01 K</td> </tr> </table> <div style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;">Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in Fields Searched⁸</div> <p>SE,DK,FI,NO classes as above</p>			Classification System	Classification Symbols	IPC5	A 01 K					
Classification System	Classification Symbols										
IPC5	A 01 K										
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%; padding: 5px;">Category *</th> <th style="width: 60%; padding: 5px;">Citation of Document,¹¹ with indication, where appropriate, of the relevant passages¹²</th> <th style="width: 30%; padding: 5px;">Relevant to Claim No.¹³</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">A</td> <td style="padding: 5px;">US, A, 2785499 (K.C. SIMPSON) 21 September 1953, see the whole document ---</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1-4</td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">A</td> <td style="padding: 5px;">US, A, 2609634 (K.C. SIMPSON) 23 June 1950, see the whole document --- -----</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1-4</td> </tr> </tbody> </table>			Category *	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³	A	US, A, 2785499 (K.C. SIMPSON) 21 September 1953, see the whole document ---	1-4	A	US, A, 2609634 (K.C. SIMPSON) 23 June 1950, see the whole document --- -----	1-4
Category *	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³									
A	US, A, 2785499 (K.C. SIMPSON) 21 September 1953, see the whole document ---	1-4									
A	US, A, 2609634 (K.C. SIMPSON) 23 June 1950, see the whole document --- -----	1-4									
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>* Special categories of cited documents:¹⁰</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 50%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"Z" document member of the same patent family</p> </div> </div>											
IV. CERTIFICATION <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-right: 1px solid black; padding: 5px;"> Date of the Actual Completion of the International Search 9th October 1992 </td> <td style="width: 50%; padding: 5px;"> Date of Mailing of this International Search Report 13 -10- 1992 </td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px; vertical-align: bottom;"> International Searching Authority <div style="text-align: center;">SWEDISH PATENT OFFICE</div> </td> <td style="padding: 5px; vertical-align: bottom;"> Signature of Authorized Officer Kerstin Bojie Janson </td> </tr> </table>			Date of the Actual Completion of the International Search 9th October 1992	Date of Mailing of this International Search Report 13 -10- 1992	International Searching Authority <div style="text-align: center;">SWEDISH PATENT OFFICE</div>	Signature of Authorized Officer Kerstin Bojie Janson					
Date of the Actual Completion of the International Search 9th October 1992	Date of Mailing of this International Search Report 13 -10- 1992										
International Searching Authority <div style="text-align: center;">SWEDISH PATENT OFFICE</div>	Signature of Authorized Officer Kerstin Bojie Janson										

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.PCT/SE 92/00449**

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
The members are as contained in the Swedish Patent Office EDP file on **28/08/92**
The Swedish Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A- 2785499	53-09-21	NONE	
US-A- 2609634	50-06-23	NONE	

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

☐ **BLACK BORDERS**

☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**

☒ **FADED TEXT OR DRAWING**

☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**

☐ **SKEWED/SLANTED IMAGES**

☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**

☐ **GRAY SCALE DOCUMENTS**

☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**

☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**

☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.